

- Operating method of membrane separation apparatus for purifying waste water, involves supplying biological treatment **liquid mixed** with **gas** to **membrane** separation unit, **clean** film elements of **membrane** separation unit.

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NOVELTY - Initially the filtering operation is stopped, and a circulating pump (3) is made to mix gas with biological treatment liquid of a bioreaction tank (1) and is supplied to **membrane** separation unit, to **clean** film elements (6) of membrane separation unit. The gas bubbles are removed from liquid and the liquid is returned to bioreaction tank. The cleaning operation of film elements is performed intermittently.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for membrane separation apparatus.

USE - For purifying domestic, industrial waste water, human waste etc.

ADVANTAGE - The adherence of sludge to film element is reduced by contacting gas bubbles with film elements, hence filtration efficiency of film element is enhanced. Excess aeration is prevented, since gas bubbles are removed from liquid before being returned to bioreaction tank.

DESCRIPTION OF DRAWING(S) - The figure shows the outline diagram of membrane separation apparatus. (Drawing includes non-English language text).

Bioreaction tank 1

Circulating pump 3

Film elements 6

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